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cordate, on petioles with broad or narrow winged-margins; uppermost lance-ovate to lanceolate; panicle open and loose; heads of flowers comparatively few, variable in size, but mostly larger than in the type; rays light blue.

Common in New Jersey and Pennsylvania, as well as westward and southward.

Aster cordifolius, L., var. LANCEOLATUS, new var.—Leaves deep green on both sides, thin, smooth, faintly scabrous, serratures appressed, sometimes nearly obsolete; cauline ones lance-ovate to narrowly lanceolate, tapering into a long acumination, the cordate sinus almost or quite filled up; uppermost narrower. In other respects like the preceding.

Along Chestnut Hill, Easton, Pa., in the deep shade of woods. Also collected on Staten Island by Dr. N. L. Britton and at White Plains, N. Y., by Miss McCabe.

Some of the features in these two varieties might suggest hybridization with *A. lævis*, but the frequent occurrence of the first over so wide an area, and at points where *A. lævis* does not exist, forbids the supposition.

THOS. C. PORTER.

On Elastic Stamens in Compositæ.*

In the Proceedings of the Academy of Natural Sciences of Philadelphia, 1883, I have noted that the filaments of some flowers of the thistle alliance are elastic. The stamens in the united column mature their growth before the pistil becomes fully elongated, and which, unable to push through the column, bears it upon its apex, until the downward pressure is so great that the pistil bursts through, when the elastic filaments at once draw the anthers down to their proper position on a level with the limb of the corolla. I had supposed that so obvious a behavior in the stamens of these plants and those of other Compositæ, would be matters of record,—but with the exception of what has been written on the irritable filaments (see Sachs' Text-book, pp. 787-797) no note seems to have been made. I was pleased to find, on introducing the subject before the combined British and

* Read before the Botanical Club of the A. A. A. S. Cleveland Meeting, 1888.

American Associations in Philadelphia in 1884, the whole subject seemed new and interesting to the many distinguished botanists present.

I desire now to add that, in the years that have followed, I note that this condition is quite common among Compositæ. It would be more easy to give a list of species in which it does not exist, than where it does. *Heliopsis* is, however, one of the best illustrations (*H. lævis*, *H. scaber*), as the anther-tube is so very long, and the filaments must be drawn out before they contract on the emergence of the pistil, to a length greater than in many other species.

At the time I refer to, some of the distinguished botanists present, conceding the renewed interest my observations threw around the subject, were not quite prepared to accept the "elastic" view of the filaments,—the interesting and repeated observations of the botanists cited by Sachs' seeming to give to irritability alone power to accomplish all the phenomena. I have since made an observation on *Helianthus* (*H. doronicoides*) which clearly establishes the fact that the anther-column is not pushed up, and again drawn down by irritable action in the filaments, but is simply pushed up by the growth of the pistil, and drawn down by the elastic filaments as soon as the apex of the pistil manages to escape. In this *Helianthus* the anthers are but lightly coherent, and the pistil has an evident tendency to a lateral instead of the usual erect tendency. It breaks through the side of the anther-column, and the anthers themselves mostly get free from their usual contact with each other before they have been drawn far above the limb of the floret. In this case there is no attempt at elongation, while there is no reason why there should not be as in the other cases, if irritability in the filaments were the active cause.

THOMAS MEEHAN.

Additions to the Iowa Flora.

The following is a list of additions to the Anthophyte flora of Iowa founded upon Dr. J. C. Arthur's "Contributions to the Flora of Iowa." I owe many thanks to Dr. Sereno Watson and Dr. Geo. Vasey, for assistance in determining some of the species.